INFORMATION SYSTEMS OUTSOURCING

MARKET OPPORTUNITIES

EUROPE 1992 - 1997

INPUT

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Abstract

Accelerated by the recession, a fundamental shift has been taking place over the last few years in European companies' attitudes towards outsourcing elements of their IS function.

This shift has led to rapid growth in the outsourcing market and rapid changes in the nature of the outsourcing services provided. For example, the outsourcing of an organisation's IS infrastructure now frequently tends to include desktop services and network management in addition to traditional data centre management.

There is also much competitive activity with the major systems vendors entering the systems operations market, and the leading U.S. professional services vendors showing renewed interest in the European market.

This report tracks these trends in the market and provides systems operations market forecasts for each European country over the period 1992-1997. These forecasts are broken down to predict the variations in growth between the differing subsectors of the outsourcing market, namely, platform operations, desktop services, network management and applications operations. Breakdowns of the market by industry sector are also provided, together with the market shares of the leading vendors in each national market.

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I
Introduction

A
Scope and Objectives

The IS departments of many European organisations are facing challenging times. Senior executives are typically demanding that the IS spending within their organisation be reduced while service levels are maintained or improved. At the same time, dramatic changes in technology, such as client/server architectures, are taking place, opening up new possibilities for information services to contribute to company performance.

Not surprisingly, outsourcing is becoming an increasingly acceptable way of tackling this conundrum. Outsourcing offers the benefits of simplified management, reduced costs and access to a wider base of up-to-date technical skills.

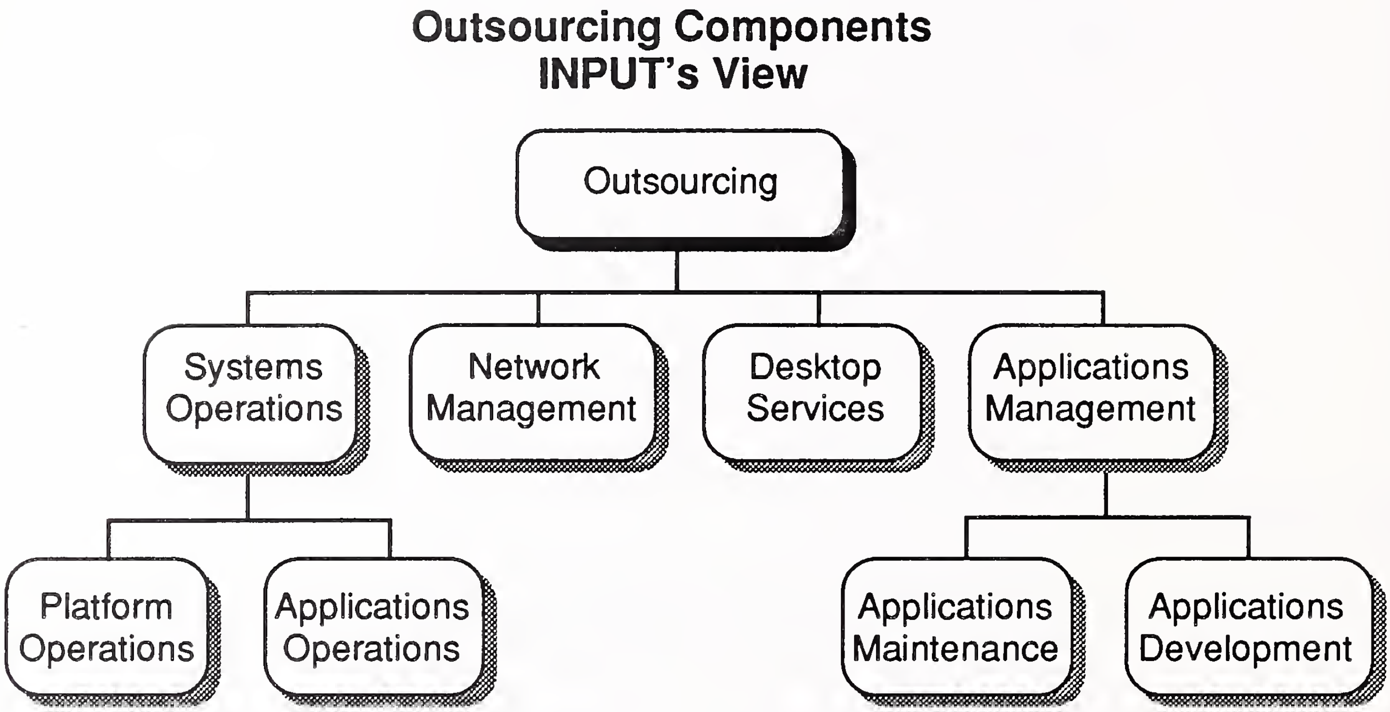
Accordingly, the outsourcing market is showing dramatic growth across Europe. This growth, in turn, is attracting a number of significant new market entrants, and the range of outsourcing services available continues to grow.

The objectives of this report are:

- To monitor the changes taking place in the market for outsourced services in Europe
- To forecast the size of the outsourcing market by country
- To identify the outsourcing market shares of the leading vendors in each country

INPUT considers the submodes shown in Exhibit I-1 to be outsourcing-type relationships and in aggregate to represent the outsourcing market.

EXHIBIT I-1



This report provides market forecasts for the outsourcing market excluding the applications management component. Forecasts for applications management are not included in this report, but are provided in INPUT's report *Outsourcing Applications Management*.

The segments within outsourcing are defined as follows:

Systems Operations - Contracting out, to a vendor, the information systems operations in either of two ways:

- *Platform Systems Operations* - The vendor is responsible for managing the computer systems and their associated networks.

- *Applications Systems Operations* - The vendor is responsible for developing and/or maintaining a client's applications software as well as operating and managing the computer systems and their associated networks.

Network Management - Contracting to a vendor for the operations and management of the computer-related telecommunications network, transmitting data, voice, image, text, local-area and wide-area networks. Voice-only network operations are not part of information systems outsourcing.

Desktop Services - Contracting out to a vendor for the deployment, maintenance, support, and connectivity of the firm's PC/workstation inventory. The service may also include performing the help desk function.

Applications Management - The vendor is responsible for the development and maintenance of all the applications systems a client uses to support a business operation.

Applications Development - Contracting out for the design, development, and long-term maintenance and enhancement of new applications software associated with a business operation.

Applications Maintenance - Contracting out only for the maintenance of the existing applications software associated with a business operation.

Profiles of fifteen of these leading vendors' outsourcing activities are provided in INPUT's report *Information Systems Outsourcing Competitive Analysis*.

B

Methodology

The research that contributed to this study was derived from two main sources:

- A series of 15 in-depth interviews with outsourcing vendors in Europe.
- INPUT's continuous annual analysis of the computer software and services market, which includes interviews with both vendors and users.

Additionally, INPUT's extensive library and database of information relating to the software and services industry was utilised.

C

Report Structure

Chapter II consists of the Executive Overview, which is a summary of the key conclusions of the study.

Chapter III provides an analysis of the European outsourcing market as a whole. This includes market forecasts, industry breakdowns, and the identification of leading vendors.

Chapter IV provides market forecasts and leading vendor assessments for each individual country market.

D

Related Reports

Information Systems Outsourcing Competitive Analysis—Europe, 1992

Outsourcing Systems Operations—Europe, 1992-1997

Outsourcing Network Management and Operations—Europe, 1992-1997

Outsourcing Desktop Services—Europe, 1992-1997

Outsourcing Applications Management—Europe, 1992-1997

II
Executive Overview

A

European Recession Accelerates Outsourcing Growth

Throughout Europe, the information services market has been depressed during 1991 and this has continued into 1992. This depression has been due to a combination of the recession and senior executives' concerns that information systems have historically failed to deliver any lasting business benefits. Accordingly, senior managers have turned their attention to improving the effectiveness of their IS systems while simultaneously reducing their organisations' IS spending.

Improved effectiveness is being tackled by strategies such as:

- Business process re-engineering

- Devolution of IS responsibility to business unit/departmental management

Cost reduction is being tackled by strategies such as:

- Downsizing
- Increased use of standard applications software products
- Outsourcing

In addition, the recession is forcing a number of major organisations—for example, BP, ICI and the U.K. government—to enhance their core business focus. As a result, such organisations are seeking to simplify the management of their enterprises and reduce their IS costs by outsourcing outsourcing functions.

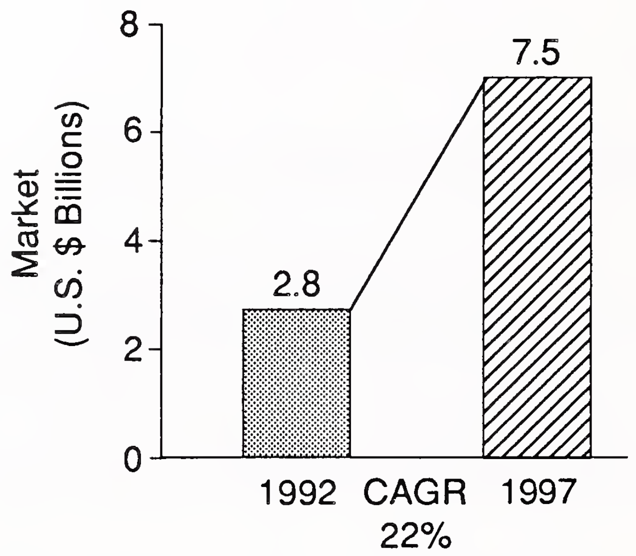
This outsourcing particularly applies to the management of IS infrastructures, giving a significant boost to the market for services such as:

- Platform operations
- Network management
- Desktop services

The overall effect is rapidly increasing acceptance of outsourcing in Europe, which is reflected in INPUT's forecast for the European outsourcing market, shown in Exhibit II-1.

EXHIBIT II-1

European Outsourcing Market



One sector that is increasingly adopting outsourcing throughout Europe is the banking sector, which has seen rapidly deteriorating profit margins in recent years and is now implementing major cost reduction programmes.

In response to high market growth, and facing the threat from the major systems vendors such as IBM and Digital, the established outsourcing vendors are endeavouring to broaden their geographic coverage and take on a more pan-European role.

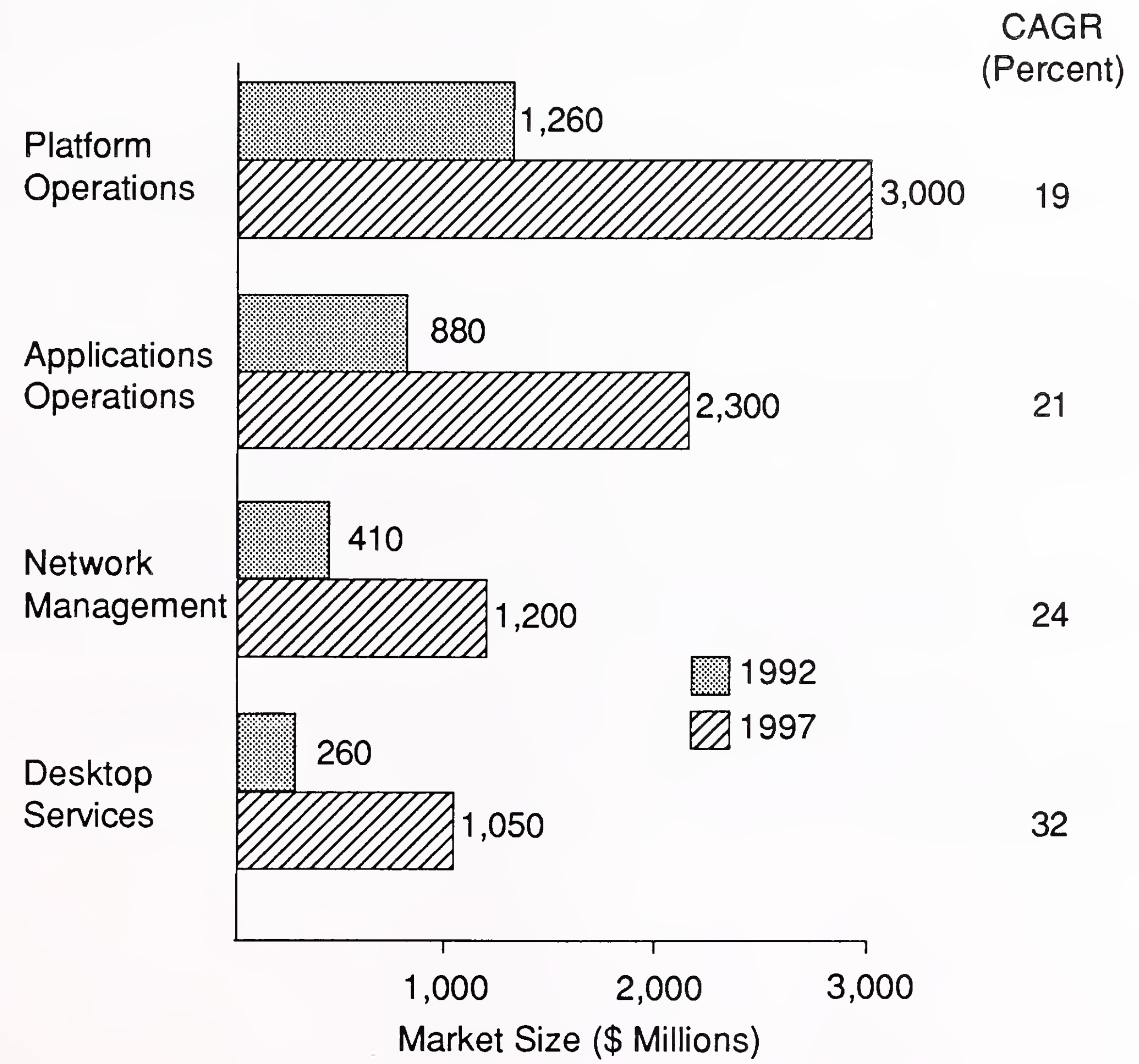
B

Infrastructure Management Remains the Core Outsourcing Activity

Exhibit II-2 shows the forecast growth in the outsourcing market by market segment.

EXHIBIT II-2

Principal Market Segments, 1992-1997
Outsourcing, Europe



In 1992, it is estimated that "infrastructure management" in the form of platform operations, network management and desktop services accounted for approximately 70% of the outsourcing market. The proportion of the outsourcing market accounted for by these services is expected to remain roughly constant through to 1997 because organisations typically show a greater propensity to outsource their infrastructure management than their systems development activities. For example, organisations such as ICI, BP and the U.K. Inland Revenue are outsourcing all or major elements of their IS infrastructures. Outsourcing of their systems development activities may follow, but is clearly a lesser priority.

However, there will be a change in emphasis within the nature of the infrastructure management task during the period 1992-1997. This change will take the form of decreased emphasis on mainframe data centre management and increased emphasis on activities such as network management and desktop services. Correspondingly, the equipment being managed by the vendor will increasingly be sited on user premises rather than consolidated into vendor data centres.

The platform operations market is also being boosted by transition outsourcing as companies undergo a change in technology and request outsourcing vendors to manage their "old" systems while the new systems are under development.

C

The Finance Sector—Continuing Outsourcing Growth

At the industry sector level, the adoption of outsourcing varies significantly from country to country. For example, in France the distribution sector has shown a high propensity to outsource, while in the United Kingdom, central government and the process manufacturing sector are currently showing high levels of outsourcing growth.

The leading industries in adopting outsourcing across Europe as a whole are listed in Exhibit II-3.

EXHIBIT II-3

Principal Industry Sector Markets, 1991
Outsourcing, Europe

Industry Sector	Market Size ($ Millions)	Percent
Discrete Manufacturing	460	20
Government	450	20
Process Manufacturing	320	14
Banking & Finance	300	13

One sector that is facing strong competitive pressures across Europe is the financial services sector, particularly the banking sector.

The banks have been hit on a number of fronts at once, with profit margins and volumes both suffering at the same time that a sharp deterioration occurred in the quality of risks.

In Germany, which has so far been less affected by recession than the rest of Europe, the banking market has been impacted during 1991 and 1992 by two major forces:

- Unification has caused the banks in what was West Germany to become embroiled in the indebtedness of what were the state-owned and state-run industries of the former East Germany.

- Competition between the big banks has increased as the government implements deregulation prior to the Single European 1993 market, with diversification into the life insurance market playing a leading part in this change.

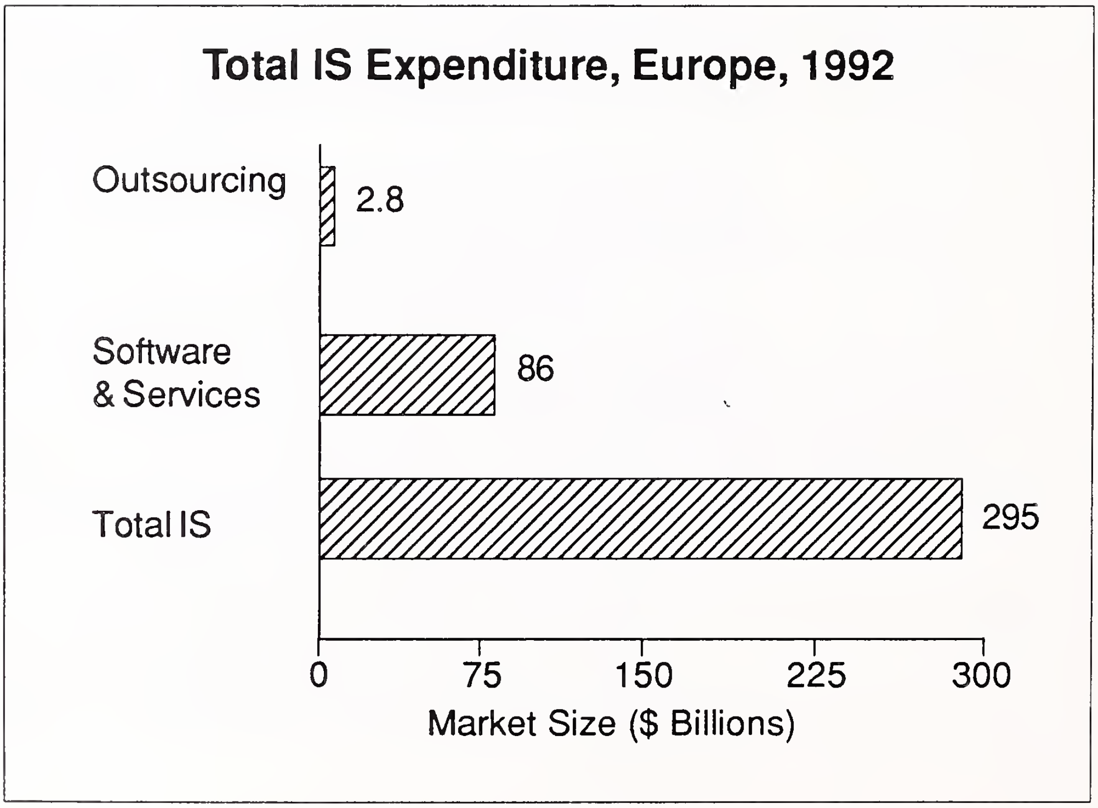
In the provinces that formed East Germany, these two factors come together as the top three banks—Deutsche, Dresdner and Commerzbank—apply themselves to the task of setting up branch networks to serve the commercial and retail banking needs of the old East.

- Deutsche and Dresdner have set up joint ventures with the Kreditbank, formerly part of the state-owned Staatsbank
- Commerzbank, the number three bank, has started to set up a branch network from scratch and currently has over 25 branches.

In the United Kingdom, major banking organisations such as the TSB have been evaluating outsourcing of their IS infrastructure management activities such as platform operations, network management and desktop services.

Exhibit II-4 illustrates the progress made by outsourcing in penetrating the information services market in Europe.

EXHIBIT II-4



At present, outsourcing accounts for 3% of external software and services spending across Europe. However, a better measure of outsourcing's market potential is the total spent by organisations across Europe on all IS-related activities, including equipment purchase and employment of in-house IS staff, for example. Against this measure, outsourcing has achieved a market penetration in Europe of approximately 1% in 1992.

At the growth rates forecast, this market penetration will only double to 2% by 1997. The United Kingdom, as indicated by Exhibit II-5, is Europe's most developed outsourcing market.

EXHIBIT II-5

Comparative Regional Market Sizes, Europe, 1992

Region	Market Size ($ Millions)	Proportion of European Market (%)
United Kingdom	1,100	39
France	660	23
Italy	300	10
Germany	250	9
Scandinavia	190	7
Benelux	190	7
Spain	70	2
Rest of Europe	90	3
Total (Rounded)	2,800	100

Here the overall penetration of the total IS market is forecast to increase from 1% in 1992 to 5% in 1997. Because of the low level of current market penetration and the United Kingdom's comparatively high propensity to outsource compared to the other major European countries, growth in outsourcing in the United Kingdom over the next five years is forecast to remain comparatively high.

The strength of the recession remains a major factor in determining the rate of adoption of outsourcing in each national market. So far, German industry has shown little inclination to outsource, but this attitude is expected to gradually change as economic pressures increase.

D

Leading Vendors Seek to Increase Geographic Coverage

The leading vendors in the European outsourcing market are listed in Exhibit II-6.

EXHIBIT II-6

Leading Vendors, 1991
Outsourcing, Europe

Company	Estimated Revenues ($M)
EDS	270
CAP Gemini Sogeti	230
Sema Group	100
GSI	90
AT&T Istel	80
Data Sciences	80

Until recently, the outsourcing market had been largely dominated by national suppliers, such as:

- Hoskyns in the United Kingdom
- GSI in France
- Alldata and tds in Germany
- Finsiel in Italy
- RAET and Volmac in the Netherlands

However, many of the leading vendors are now seeking to expand their outsourcing presence across Europe.

Examples of this expansion include CAP Gemini Sogeti's increased emphasis on outsourcing following its acquisition of Hoskyns and Volmac. CAP Gemini Sogeti has now won its first outsourcing contracts in France, and in Germany through its involvement with Debis Systemhaus.

EDS has dramatically strengthened its position in outsourcing in Europe with the acquisition of SD-Scicon, and hence GFI. This acquisition has been sufficient to promote EDS to market leader in both the European outsourcing market and in France.

AT&T Istel has recently acquired Dataid in France and is expected to make further acquisitions in the future to give the company a greater pan-European outsourcing presence.

Overall, it is likely that further mergers and partnerships will take place amongst the European outsourcing vendor community in order to strengthen market position.

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III
Outsourcing Growth Accelerates

A
Network Management and Desktop Services Sectors Show Highest Growth

Exhibit III-1 provides INPUT's forecast for the outsourcing market in Europe over the period 1992-1997.

EXHIBIT III-1

Outsourcing Market Forecast
Europe, 1992-1997

	Market Forecast ($ Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	1,100	1,260	19	3,000
Applications Operations	730	880	21	2,300
Network Management	320	410	24	1,200
Desktop Services	160	260	32	1,050
Total (Rounded)	2,300	2,800	22	7,500

The two subsectors network management and desktop services have been introduced for the first time in 1992. This has been prompted by the emerging outsourcing opportunities in these areas. The corresponding 1991 outsourcing forecasts only included the subsectors platform operations and applications operations.

Overall, the software and services market in Europe continues to be severely impacted by the recession. For software and services in total, INPUT is forecasting a growth rate of 11% per annum between 1992 and 1997.

However, the outsourcing market is being stimulated by the recession and is forecast to achieve double this rate of growth, at an average of 22% per annum.

INPUT has always predicted that outsourcing will develop in three stages:

- Firstly, by outsourcing IS infrastructure management such as the operation of data centres

- Secondly, by the combination of management by external vendors of both systems development and IS infrastructures

- Thirdly, by the outsourcing of complete business functions of which IS is merely a part.

Indeed, in Europe applications operations is forecast to grow more rapidly than platform operations over the next five years as organisations increasingly accept the virtues of outsourcing systems development.

In other instances, the outsourcing of complete business functions (business operations) has also begun. Examples of this include the willingness of many local government authorities in the United Kingdom to outsource their revenue collection, and BP Exploration's outsourcing of its accounting function to Andersen Consulting.

However, many organisations are still at the stage of outsourcing their IS infrastructure management. Even here, there are major changes taking place in the nature of the services outsourced with a decreased emphasis on the outsourcing of mainframe-based data centres and an increased emphasis on the management of corporate networks and desktop services.

As a result, these new forms of IS infrastructure management are forecast to be the fastest growing subsectors of outsourcing over the next five years.

B

Germany and United Kingdom Accelerate Use of Outsourcing

Exhibit III-2 provides forecasts for the outsourcing market by country over the period 1992-1997.

EXHIBIT III-2

Outsourcing Country Markets Europe, 1992-1997

	Market Forecast ($ Millions)			
Country	1991	1992	1992-1997 CAGR (%)	1997
France	550	660	19	1,550
Germany	200	250	23	700
United Kingdom	880	1,100	25	3,300
Italy	250	300	19	720
Sweden	60	75	19	180
Denmark	25	30	19	70
Norway	27	35	20	85
Finland	40	50	18	110
Netherlands	100	125	20	320
Belgium	50	60	17	130
Spain	55	65	19	160
Switzerland	37	45	16	95
Austria	15	20	18	45
Portugal	2	3	24	8
Greece	3	4	17	10
Ireland	7	10	17	20
Eastern Europe	3	8	44	50
Total (Rounded)	2,300	2,800	22	7,500

The United Kingdom is the most developed outsourcing market in Europe, and will continue to develop rapidly. This is due to a combination of the depth of the recession being experienced in the United Kingdom and the cultural stance taken towards outsourcing. Executives in the United Kingdom have a greater propensity to adopt a core business focus than executives in many other regions of Europe.

This particularly applies to Germany where many executives are likely to oppose an outsourcing philosophy. This stance is compounded by the country's employment laws. Nevertheless, organisations in Germany are now facing more difficult economic conditions and are taking an increasing interest in exploring outsourcing options. A number of major U.S. outsourcing vendors are also actively targeting Germany. The concept of outsourcing is becoming widely publicised, both by these organisations and German vendors such as Debis Systemhaus. Consequently, adoption of outsourcing in Germany is forecast to accelerate over the next five years.

Forecasts for each of the subsectors of outsourcing by country are listed in Exhibits III-3 to III-6.

EXHIBIT III-3

Platform Operations Country Markets
Europe, 1992-1997

	Market Forecast ($ Millions)			
Country	1991	1992	1992-1997 CAGR (%)	1997
France	220	260	19	640
Germany	50	55	16	110
United Kingdom	510	580	21	1,500
Italy	100	115	17	250
Sweden	35	45	15	90
Denmark	8	10	17	20
Norway	12	15	16	30
Finland	20	25	16	50
Netherlands	55	60	16	120
Belgium	30	35	16	70
Spain	20	23	16	50
Switzerland	20	20	11	40
Austria	5	7	13	13
Portugal	1	1	22	2
Greece	2	2	15	4
Ireland	4	4	19	10
Eastern Europe	1	4	38	20
Total (Rounded)	1,100	1,260	19	3,000

EXHIBIT III-4

Network Management Country Markets Europe, 1992-1997

	Market Forecast ($ Millions)			
Country	1991	1992	1992-1997 CAGR (%)	1997
France	95	110	21	290
Germany	65	85	21	225
United Kingdom	85	115	26	360
Italy	28	35	26	100
Sweden	6	8	30	30
Denmark	2	3	27	8
Norway	2	3	27	10
Finland	4	4	26	15
Netherlands	6	12	22	32
Belgium	3	4	21	10
Spain	11	17	25	50
Switzerland	4	5	29	20
Austria	2	3	30	10
Portugal	1	1	27	2
Greece	-	1	28	2
Ireland	2	2	25	5
Eastern Europe	1	2	38	10
Total (Rounded)	320	410	24	1,180

EXHIBIT III-5

Desktop Services Country Markets
Europe, 1992-1997

	Market Forecast ($ Millions)			
Country	1991	1992	1992-1997 CAGR (%)	1997
France	20	30	28	100
Germany	23	40	33	160
United Kingdom	75	120	35	550
Italy	7	10	25	30
Sweden	5	10	28	30
Denmark	3	5	27	17
Norway	3	5	30	18
Finland	2	3	22	8
Netherlands	18	23	32	95
Belgium	1	1	30	4
Spain	3	3	25	10
Switzerland	2	3	25	10
Austria	2	3	23	8
Portugal	-	-	23	1
Greece	-	-	23	1
Ireland	-	-	40	1
Eastern Europe	-	1	38	5
Total (Rounded)	160	260	32	1,050

EXHIBIT III-6

Applications Operations Country Markets Europe, 1992-1997

	Market Forecast ($ Millions)			
Country	1991	1992	1992-1997 CAGR (%)	1997
France	210	250	17	540
Germany	60	72	22	200
United Kingdom	210	260	27	860
Italy	110	140	19	330
Sweden	13	15	14	28
Denmark	10	11	15	22
Norway	10	12	18	27
Finland	15	17	16	35
Netherlands	25	32	16	68
Belgium	17	20	18	47
Spain	20	25	16	50
Switzerland	14	15	15	30
Austria	6	7	14	13
Portugal	1	1	20	2
Greece	1	1	14	3
Ireland	2	2	15	3
Eastern Europe	1	1	72	15
Total (Rounded)	730	880	21	2,300

Exhibit III-7 provides a breakdown of the outsourcing market in Europe by industry sector.

EXHIBIT III-7

Outsourcing, Industry Sector Market Analysis—Europe 1991

Industry Sector	Market Size ($ Millions)	Percent
Manufacturing	780	34
- Discrete	460	20
- Process	320	14
Distribution	270	12
Financial Services	400	17
- Banking & Finance	300	13
- Insurance	100	4
Government	450	20
Utilities	140	6
Services	150	7
Other	110	4
Total	2,300	100

However, it is important to bear in mind that the adoption of outsourcing by industry varies widely from country to country.

For example, in the United Kingdom and Italy, government—both national and local—is a very important sector. In France, the distribution and transportation sectors have shown a high propensity to adopt outsourcing.

Across Europe as a whole, the main consensus is the increasing adoption of outsourcing by the financial services sector.

C

Systems Vendors Enter the Market

Over the last year, there has been considerable competitive manoeuvring within the European outsourcing market. The main trends have been:

- Increased activity by the major U.S. outsourcing vendors
- Increased activity by the leading systems vendors
- The development of increased geographic coverage by the leading European outsourcing vendors

Major U.S. outsourcing companies have achieved a measure of success in the European outsourcing market over the past year with:

- Computer Sciences Corporation (CSC) winning a major contract with Ideal Standard in Germany
- Perot Systems winning major contracts worth a total of $1 billion with East Midlands Electricity in the U.K. and Europcar in France

The leading systems vendors—such as IBM, Digital, Groupe Bull and Unisys—are also developing their outsourcing activities across Europe. For example, IBM has won contracts with Equifax and National Starch and Chemical.

These vendors are particularly strong in platform operations; both IBM and Digital are keen to promote their network management capabilities and Digital its desktop services capabilities.

With increased penetration of the European outsourcing market by major U.S. outsourcing vendors and by the systems vendors, the indigenous vendors are endeavouring to widen their sphere of influence within Europe. For example, CAP Gemini Sogeti is actively seeking to develop a pan-European outsourcing capability, while AT&T Istel recently acquired Dataid. Mergers or partnerships involving other leading players are likely to take place over the next few years.

The leading outsourcing vendors in Europe at end 1991 are listed in Exhibit III-8. Many of these vendors are profiled in detail in INPUT's report *Information Systems Outsourcing Competitive Analysis.*

EXHIBIT III-8

Leading Outsourcing Vendors, Europe, 1991

Company	Estimated Revenues ($M)	Market Share (%)
EDS	270	12
CAP Gemini Sogeti	230	10
Sema Group	100	4
GSI	90	4
AT&T Istel	80	3
Data Sciences	80	3
Finsiel	60	3
Télésystèmes	50	2
Digital	45	2
CFM	45	2
Total Listed	1,050	46
Total Market	2,300	100

IV
Country Markets

A
Transition Outsourcing Becomes Established in France

Exhibit IV-1 provides a forecast of the outsourcing market in France.

EXHIBIT IV-1

Outsourcing Market
France, 1992-1997

	Market Forecast (FF Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	1,150	1,370	19	3,290
Applications Operations	1,100	1,300	17	2,810
Network Management	500	575	21	1,480
Desktop Services	100	155	28	530
Outsourcing	2,850	3,400	19	8,100

Transition outsourcing is prompting the growth of the platform operations market in France, and has been a major factor in the rapid development of Axone to fourth place in the French outsourcing market. Transition outsourcing involves the vendor managing the service provided from the "old IS systems" while a new generation of IS systems is being developed. The "old IS systems" involved in this form of outsourcing are typically mainframe-based while the new systems are typically developed on midrange equipment or PC LANs.

The desktop services market has yet to become established in France, but is being promoted by Random—a member of the ICG Group. Hoskyns is also endeavouring to enter the desktop services market in the United Kingdom, and is likely to co-ordinate this activity with CAP Gemini Sogeti's French operations. So, although the desktop services market in France has been slow in developing so far, significant growth is expected over the next five years.

The breakdown of the outsourcing market in France by industry sector is provided in Exhibit IV-2.

EXHIBIT IV-2

Outsourcing, Industry Sector Market Analysis—France, 1991

Industry Sector	Market Size (FF Millions)	Percent
Manufacturing	1,000	36
- Discrete	600	22
- Process	400	14
Distribution (Retail & Wholesale)	500	17
Financial Services	400	14
- Banking & Finance	280	10
- Insurance	120	4
Public Sector	480	17
Utilities	120	4
Services	230	8
Other	120	4
Total	2,850	100

In France, the distribution and transportation sectors are especially strong outsourcing markets, and increased activity is expected from within the banking and finance sector.

The leading outsourcing vendors in France are listed in Exhibit IV-3.

EXHIBIT IV-3

Leading Outsourcing Vendors France, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (FF Millions)
1	EDS-GFI	19	550
2	GSI	12	330
3	Télésystèmes	9	270
4	Axone	6	180
5	CISI	6	175
6	Axime	5	140
7	AT&T Dataid	4	100
8 =	CAP Gemini Sogeti	2	60
8 =	Bull	2	60
10	Groupe Concept	2	55
	Total Listed	67	1,920
	Total Market	100	2,850

Historically EDS has been regarded as comparatively unsuccessful in targeting outsourcing in France, due to the company's emphasis on targeting large applications operations contracts. However, the acquisition of GFI has given EDS overall leadership in the French market, overtaking GSI, and a more European approach to the outsourcing market. It remains to be seen if EDS can capitalise on GFI's French outsourcing expertise and maintain its leadership position in France.

Profiles of the outsourcing activities of GSI, Télésystèmes and Axone are provided in the report *IS Outsourcing Competitive Analysis.*

B

Applications Operations Develops in Germany

Exhibit IV-4 provides a forecast of the outsourcing market in Germany.

EXHIBIT IV-4

Outsourcing Market Germany, 1992-1997

	Market Forecast (DM Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	75	80	16	170
Applications Operations	90	110	22	300
Network Management	100	130	21	340
Desktop Services	35	60	33	250
Outsourcing	300	380	23	1,060

To date, German organisations have shown little enthusiasm for outsourcing. However, Germany is now becoming a focus of attention for many of the leading U.S. outsourcing vendors and for the equipment vendors. At the same time, Debis Systemhaus is beginning to win its initial outsourcing contracts. Accordingly, there is evidence that German organisations are becoming more aware of outsourcing, and that the outsourcing market is beginning to take off.

There are signs that the market may develop differently than those in the United Kingdom and France. In those countries, the outsourcing market has initially developed primarily through platforms operations. In Germany, the market for platform operations is less established and a greater proportion of outsourcing revenues is expected to be generated via applications operations.

The leading outsourcing vendors in Germany are listed in Exhibit IV-5.

EXHIBIT IV-5

Leading Outsourcing Vendors
Germany, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (DM Millions)
1	EDS	20	60
2	Alldata	10	30
3	Debis Systemhaus	8	25
4	TDS	7	20
5=	Digital	5	15
5=	IBM	5	15
5=	Fiducia	5	15
8=	Taylorix	3	10
8=	Info AG	3	10
8=	AC Service	3	10
	Total Listed	70	210
	Total Market	100	300

Historically the bulk of the revenues of the German vendors such as Alldata and TDS has been derived from processing services activities such as the SAP bureau services. However, these companies, together with Debis Systemhaus, are increasingly turning their attention to the development of the outsourcing market.

Profiles of Alldata, TDS, Digital and IBM are contained in the report *IS Outsourcing Competitive Analysis.*

C

Increased Outsourcing Activity in the U.K. in 1992

Exhibit IV-6 provides the outsourcing forecast for the United Kingdom.

EXHIBIT IV-6

Outsourcing Market
United Kingdom, 1992-1997

	Market Forecast (£ Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	270	310	21	800
Applications Operations	110	140	27	460
Network Management	45	60	26	190
Desktop Services	40	65	35	290
Outsourcing	465	575	25	1,740

After a period in the second half of 1991 when it appeared that the outsourcing market in the U.K. was flattening out, the market has developed a fresh impetus in 1992. Indeed, 1992 offers the prospect of some very large outsourcing deals in the U.K. as BP evaluates the outsourcing of its worldwide IS infrastructure and the Inland Revenue tenders for an outsourcing contract worth $100-$200 million.

There are also signs of new outsourcing markets becoming established in the U.K. with the announcement in the last twelve months of a number of significant desktop services and network management contracts. One example of a major desktop services contract is P&P's arrangement with ICI. An example of a major network management contract is GEC's arrangement with Mercury.

The breakdown of the outsourcing market by industry is shown in Exhibit IV-7.

EXHIBIT IV-7

Outsourcing, Industry Sector Market Analysis—United Kingdom, 1991

Industry Sector	Market Size (£ Millions)	Percent
Manufacturing	155	33
- Discrete	85	18
- Process	70	15
Distribution (Retail & Wholesale)	35	8
Financial Services	80	17
- Banking & Finance	65	14
- Insurance	15	3
Public Sector	115	25
- Health	70	15
- Local & National Government	45	10
Utilities	30	7
Services	25	5
Other	25	5
Total (Rounded)	465	100

In the United Kingdom, the process manufacturing sector—for example, BP and ICI—and the public sector have been particularly active, with many of the major financial institutions evaluating outsourcing.

The utilities have been particularly active in transition outsourcing because of the need to adjust their business processes to the demands of the private sector. In addition, Perot Systems has recently announced a major contract to assist East Midlands Electricity in the redevelopment of its systems.

The leading vendors in the U.K. are listed in Exhibit IV-8.

EXHIBIT IV-8

Leading Outsourcing Vendors United Kingdom, 1991

Rank	Company	1991 Market Share (%)	Estimated Revenue (£ Millions)
1	CGS/Hoskyns	22	100
2	EDS-Scicon	12	55
3	Sema Group	11	50
4	AT&T Istel	9	40
5	Data Sciences	8	35
6	ICL/CFM	5	25
7	Andersen Consulting	4	20
8	Digital	3	15
9=	ITnet	2	10
9=	P&P	2	10
	Total Listed*	77	360
	Total Market	100	465

*May not add due to rounding.

Hoskyns maintains a clear lead in the U.K. In 1992, the company reorganised its outsourcing division to focus more attention on newly emerging markets such as desktop services and applications management, together with the management of midrange systems.

Profiles of the outsourcing activities of Hoskyns, AT&T Istel, Data Sciences, Andersen Consulting and Digital are contained in the report *Information Systems Outsourcing Competitive Analysis*.

D

Public Sector Dominates Outsourcing in Italy

Exhibit IV-9 provides INPUT's forecast for the outsourcing market in Italy.

EXHIBIT IV-9

Outsourcing Market Italy, 1992-1997

	Market Forecast (Lira Billions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	115	130	17	285
Applications Operations	130	160	19	380
Network Management	32	38	26	120
Desktop Services	8	12	25	35
Outsourcing	285	340	19	820

The outsourcing market continues to be dominated by Finsiel's activities in the public sector, though the banking and finance sector is expected to become an increasing source of outsourcing opportunities.

Groupe Bull is also one of the leading outsourcing vendors in Italy. Groupe Bull views transition outsourcing as an important offering in assisting organisations to move from a mainframe-based to a client/server environment.

Like Germany, a number of new entrants are believed to be interested in developing their presence in the Italian outsourcing market.

The leading outsourcing vendors in Italy are listed in Exhibit IV-10.

EXHIBIT IV-10

Leading Outsourcing Vendors
Italy, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (Lira Billions)
1	Finsiel	25	70
2	Olivetti	11	30
3	CDS	7	20
4	Groupe Bull	5	15
5	S&M Group	4	10
6=	Sarin	2	5
6=	IBM	2	5
6=	Datitalia Processing	2	5
6=	Digital	2	5
6=	Andersen Consulting	2	5
	Total Listed*	60	170
	Total Market	100	285

*May not add due to rounding.

E

Sweden

EXHIBIT IV-11

Outsourcing Market
Sweden, 1992-1997

	Market Forecast (Sek Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	200	240	15	480
Applications Operations	70	80	14	155
Network Management	35	45	30	170
Desktop Services	30	50	28	170
Outsourcing	335	415	18	975

EXHIBIT IV-12

Leading Outsourcing Vendors
Sweden, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (Sek Millions)
1	EDEBE	15	50
2	Unisys	10	35
3	EDS	9	30
4	Svenska Datacentralen	7	25
5	Databolin	4	15
	Total Listed	46	155
	Total Market	100	335

F

Denmark

EXHIBIT IV-13

Outsourcing Market
Denmark, 1992-1997

	Market Forecast (DK Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	45	55	17	120
Applications Operations	60	65	15	130
Network Management	12	15	27	50
Desktop Services	20	30	27	100
Outsourcing	137	165	19	400

EXHIBIT IV-14

Leading Outsourcing Vendors
Denmark, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (DM Millions)
1	PBS	26	35
2	JDC	18	25
3	OK Data	11	15
4	dan Net	7	10
5	Datema	4	5
	Total Listed	66	90
	Total Market	100	137

G

Norway

EXHIBIT IV-15

Outsourcing Market
Norway, 1992-1997

Subsector	Market Forecast (NK Millions)			
	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	70	85	16	180
Applications Operations	60	70	18	160
Network Management	12	20	27	65
Desktop Services	20	30	30	110
Outsourcing	162	205	20	515

EXHIBIT IV-16

Leading Outsourcing Vendors
Norway, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (NK Millions)
1	EDB A/S	12	20
2	NIT	12	20
3	IBM	9	15
4	Teamco	6	10
5	Fellesdata	6	10
	Total Listed	46	75
	Total Market	100	162

H

Finland

EXHIBIT IV-17

Outsourcing Market
Finland, 1992-1997

	Market Forecast (FM Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	85	100	16	210
Applications Operations	60	70	16	150
Network Management	17	18	26	58
Desktop Services	8	12	22	32
Outsourcing	170	200	18	450

EXHIBIT IV-18

Leading Outsourcing Vendors
Finland, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue
1	Tietotehdas	24	40
2	Paakupunk	15	25
3	Progmatic	9	15
4	VTKK	9	15
5	IBM	6	10
	Total Listed	62	105
	Total Market	100	170

I

Netherlands

EXHIBIT IV-19

Outsourcing Market Netherlands, 1992-1997

Subsector	Market Forecast (Dfl Millions) 1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	90	100	16	210
Applications Operations	45	55	16	115
Network Management	10	20	22	55
Desktop Services	30	40	32	160
Outsourcing	175	215	20	540

EXHIBIT IV-20

Leading Outsourcing Vendors The Netherlands, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (Dfl Millions)
1	RAET	23	40
2	EDS	14	25
3	CMG	11	20
4	VOLMAC	9	15
5	CSC	6	10
	Total Listed	63	110
	Total Market	100	175

J

Belgium

EXHIBIT IV-21

Outsourcing Market
Belgium, 1992-1997

Subsector	Market Forecast (BF Millions) 1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	890	1,050	16	2,200
Applications Operations	530	640	18	1,460
Network Management	105	110	21	285
Desktop Services	25	30	30	110
Outsourcing	1,550	1,830	17	4,055

EXHIBIT IV-22

Leading Outsourcing Vendors
Belgium, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (BF Millions)
1	CSC	23	350
2	Cegeka	15	230
3	EDS	10	160
4	IBM	9	140
5	CMG	5	80
	Total Listed	62	960
	Total Market	100	1,550

K

Switzerland

EXHIBIT IV-23

Outsourcing Market
Switzerland, 1992-1997

	Market Forecast (SF Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	24	29	11	50
Applications Operations	18	20	15	40
Network Management	5	7	29	25
Desktop Services	3	4	25	12
Outsourcing	50	60	16	127

EXHIBIT IV-24

Leading Outsourcing Vendors
Switzerland, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue
1	GSI	26	13
2	IBM	20	10
3	Telekurs	10	5
4	AC Service	8	4
5	Digital	6	3
	Total Listed	70	35
	Total Market	100	50

L

Austria

EXHIBIT IV-25

Outsourcing Market Austria, 1992-1997

	Market Forecast (Sch Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	65	75	13	140
Applications Operations	60	70	14	135
Network Management	20	30	30	110
Desktop Services	20	30	23	85
Outsourcing	165	205	18	470

EXHIBIT IV-26

Leading Outsourcing Vendors Austria, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (Sch Millions)
1	IBM	15	25
2	Data Service	12	20
3	GRZ	9	15
4	Unisys	6	10
5	Management Data	3	5
	Total Listed	45	75
	Total Market	100	165

M

Spain

EXHIBIT IV-27

Outsourcing Market
Spain, 1992-1997

	Market Forecast (Ptas Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	1,850	2,200	16	4,600
Applications Operations	2,000	2,300	16	4,800
Network Management	1,100	1,600	25	4,900
Desktop Services	250	300	25	920
Outsourcing*	5,200	6,400	19	15,200

*May not add due to rounding

EXHIBIT IV-28

Leading Outsourcing Vendors
Spain, 1991

Rank	Company	Market Share (%)	1991 Estimated Revenue (Ptas Millions)
1	GSI	31	1,600
2	EDS	7	350
3	IBM	5	250
4	Unisys	4	200
5	Eritel	3	180
	Total Listed	50	2,580
	Total Market	100	5,200

N

Portugal

EXHIBIT IV-29

Outsourcing Market
Portugal, 1992-1997

	Market Forecast (Esc Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	100	120	22	330
Applications Operations	80	95	19	230
Network Management	70	100	27	330
Desktop Services	30	60	23	170
Outsourcing*	280	375	24	1,100

*May not add due to rounding

O

Greece

EXHIBIT IV-30

Outsourcing Market
Greece, 1992-1997

	Market Forecast (Dra Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	300	350	15	690
Applications Operations	200	230	14	450
Network Management	80	100	28	340
Desktop Services	20	50	23	140
Outsourcing*	600	730	17	1,600

*May not add due to rounding

P

Ireland

EXHIBIT IV-31

Outsourcing Market Ireland, 1992-1997

	Market Forecast (IR £ Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	2	3	19	6
Applications Operations	1	1	15	2
Network Management	1	1	25	3
Desktop Services	-	-	40	1
Outsourcing	4	5	19	12

Q

Eastern Europe

EXHIBIT IV-32

Outsourcing Market Eastern Europe, 1992-1997

	Market Forecast ($ Millions)			
Subsector	1991	1992	1992-1997 CAGR (%)	1997
Platform Operations	1	4	38	20
Applications Operations	1	1	72	15
Network Management	1	2	38	10
Desktop Services	-	1	38	5
Outsourcing	3	8	44	50

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A
Market Forecasts in Local Currencies

EXHIBIT A-1

Outsourcing Market—France (FF Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	1,150	1,370	1,640	1,960	2,330	2,770	3,290	19
Applications Operations	1,100	1,300	1,520	1,780	2,070	2,410	2,810	17
Desktop Services	100	155	200	255	325	415	530	28
Network Management	500	575	700	850	1,020	1,230	1,480	21
Outsourcing	2,850	3,400	4,050	4,850	5,750	6,850	8,100	19

EXHIBIT A-2

Outsourcing Market—Germany (DM Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	75	80	95	110	130	150	170	16
Applications Operations	90	110	135	165	200	240	300	22
Desktop Services	35	60	80	110	145	190	250	33
Network Management	100	130	155	190	230	275	340	21
Outsourcing	300	380	465	575	705	855	1,060	23

EXHIBIT A-3

Outsourcing Market—United Kingdom (£ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	270	310	380	460	560	680	800	21
Applications Operations	110	140	180	230	290	360	460	27
Desktop Services	40	65	90	120	160	220	290	35
Network Management	45	60	75	95	120	150	190	26
Outsourcing	470	580	730	910	1,130	1,410	1,740	25

EXHIBIT A-4

Outsourcing Market—Italy (Lira Billions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	115	130	150	175	205	240	285	17
Applications Operations	130	160	190	225	270	320	380	19
Desktop Services	8	12	15	19	23	29	35	25
Network Management	32	38	50	60	75	95	120	26
Outsourcing	285	340	405	480	575	685	820	19

EXHIBIT A-5

Outsourcing Market—Sweden (SK Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	200	240	280	325	370	420	480	15
Applications Operations	70	80	90	105	120	135	155	14
Desktop Services	30	50	60	80	100	130	170	28
Network Management	35	45	60	80	100	130	170	30
Outsourcing	335	415	490	590	690	815	975	19

EXHIBIT A-6

Outsourcing Market—Denmark (DK Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	45	55	65	75	90	105	120	17
Applications Operations	60	65	75	85	100	115	130	15
Desktop Services	20	30	40	50	65	80	100	27
Network Management	12	15	19	25	32	40	50	27
Outsourcing	140	170	200	240	290	340	400	19

EXHIBIT A-7

Outsourcing Market—Norway (NK Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	70	85	100	115	135	155	180	16
Applications Operations	60	70	85	100	120	140	160	18
Desktop Services	20	30	40	50	65	85	110	30
Network Management	12	20	25	30	40	50	65	27
Outsourcing	160	205	250	295	360	430	515	20

EXHIBIT A-8

Outsourcing Market—Finland (FM Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	85	100	120	140	160	185	210	16
Applications Operations	60	70	80	90	105	125	150	16
Desktop Services	8	12	15	18	22	27	32	22
Network Management	17	18	23	29	36	45	58	26
Outsourcing	170	200	240	275	325	380	450	18

EXHIBIT A-9

Outsourcing Market—Netherlands (Dfl Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	90	100	115	130	150	175	210	16
Applications Operations	45	55	65	75	85	100	115	16
Desktop Services	30	40	55	70	90	120	160	32
Network Management	10	20	25	30	35	45	55	22
Outsourcing	175	215	260	305	360	440	540	20

EXHIBIT A-10

Outsourcing Market—Belgium (BF Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	890	1,050	1,220	1,420	1,650	1,920	2,200	16
Applications Operations	530	640	760	900	1,070	1,270	1,460	18
Desktop Services	25	30	40	50	65	85	110	30
Network Management	105	110	135	165	200	240	285	21
Outsourcing	1,550	1,830	2,160	2,540	2,990	3,520	4,060	17

EXHIBIT A-11

Outsourcing Market—Switzerland (SF Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	24	29	33	36	40	45	50	11
Applications Operations	18	20	23	27	31	35	40	15
Desktop Services	3	4	5	6	8	10	12	25
Network Management	5	7	9	12	15	20	25	29
Outsourcing	50	60	70	80	93	109	127	16

EXHIBIT A-12

Outsourcing Market—Austria (Sch Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	65	75	85	95	110	125	140	13
Applications Operations	60	70	80	90	105	120	135	14
Desktop Services	20	30	35	45	55	70	85	23
Network Management	20	30	40	50	65	85	110	30
Outsourcing	165	205	240	280	335	400	470	18

EXHIBIT A-13

Outsourcing Market—Spain (Ptas Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	1,850	2,200	2,500	2,900	3,400	4,000	4,600	16
Applications Operations	2,000	2,300	2,600	3,000	3,500	4,100	4,800	16
Desktop Services	250	300	375	465	585	735	920	25
Network Management	1,100	1,600	2,000	2,500	3,100	3,900	4,900	25
Outsourcing	5,200	6,400	7,500	8,900	10,600	12,700	15,200	19

EXHIBIT A-14

Outsourcing Market—Portugal (Esc Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	100	120	145	175	215	265	330	22
Applications Operations	80	95	110	130	160	195	230	19
Desktop Services	30	60	73	88	110	138	170	23
Network Management	70	100	124	154	198	255	330	27
Outsourcing	280	375	450	545	685	855	1,100	24

EXHIBIT A-15

Outsourcing Market—Greece (Dra Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	300	350	405	470	545	620	690	15
Applications Operations	200	230	270	310	360	410	450	14
Desktop Services	20	50	60	75	95	115	140	23
Network Management	80	100	130	165	215	275	340	28
Outsourcing	600	750	850	1,000	1,200	1,400	1,600	17

EXHIBIT A-16

Outsourcing Market—Ireland (IR £ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	2	3	3	4	4	5	6	19
Applications Operations	1	1	2	2	2	2	2	15
Desktop Services	0	0	0	0	0	1	1	40
Network Management	1	1	1	2	2	3	3	25
Outsourcing	4	5	6	7	9	10	11	19

EXHIBIT A-17

Outsourcing Market—Eastern Europe (U.S. $ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	1	4	5	7	10	15	20	38
Applications Operations	1	1	2	3	5	8	15	72
Desktop Services	0	1	2	2	3	5	5	38
Network Management	1	2	1	2	3	5	10	38
Outsourcing	3	8	9	14	21	33	50	44

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B
Market Forecasts in U.S. Dollars (Millions)

Please note that the totals in the following exhibits may not add due to rounding.

EXHIBIT B-1

Outsourcing Market—France ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	220	260	320	380	450	530	640	19
Applications Operations	210	250	290	340	400	470	540	17
Desktop Services	19	30	39	49	63	80	102	28
Network Management	97	111	135	164	197	237	286	21
Outsourcing	550	660	780	940	1,110	1,320	1,560	19

EXHIBIT B-2

Outsourcing Market—Germany ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	50	55	60	70	90	100	110	16
Applications Operations	60	70	90	110	130	160	200	22
Desktop Services	23	39	53	72	95	125	164	33
Network Management	66	86	102	125	151	181	224	21
Outsourcing	200	250	310	380	460	560	700	23

EXHIBIT B-3

Outsourcing Market—United Kingdom ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	510	580	710	860	1,050	1,280	1,500	21
Applications Operations	210	260	340	430	550	680	860	27
Desktop Services	75	122	169	226	301	414	545	35
Network Management	85	113	141	179	226	282	357	26
Outsourcing	880	1,090	1,370	1,710	2,120	2,650	3,270	25

EXHIBIT B-4

Outsourcing Market—Italy ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	100	115	130	150	180	210	250	17
Applications Operations	110	140	170	200	230	280	330	19
Desktop Services	7	10	13	16	20	25	31	25
Network Management	28	33	43	53	65	83	104	26
Outsourcing	250	300	350	420	500	600	720	19

EXHIBIT B-5

Outsourcing Market—Sweden ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	36	44	51	59	67	76	87	15
Applications Operations	13	15	16	19	22	25	28	14
Desktop Services	5	9	11	14	18	23	31	28
Network Management	6	8	11	14	18	23	31	30
Outsourcing	61	75	89	107	125	147	176	19

EXHIBIT B-6

Outsourcing Market—Denmark ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	8	10	11	13	16	18	21	17
Applications Operations	10	11	13	15	17	20	22	15
Desktop Services	3	5	7	9	11	14	17	27
Network Management	2	3	3	4	5	7	9	27
Outsourcing	24	29	34	41	49	58	68	19

EXHIBIT B-7

Outsourcing Market—Norway ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	12	14	17	19	23	26	30	16
Applications Operations	10	12	14	17	20	24	27	18
Desktop Services	3	5	7	9	11	14	18	30
Network Management	2	3	4	5	7	8	11	27
Outsourcing	27	35	42	50	60	72	86	20

EXHIBIT B-8

Outsourcing Market—Finland ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	21	24	29	34	39	45	51	16
Applications Operations	15	17	20	22	26	30	36	16
Desktop Services	2	3	4	4	5	7	8	22
Network Management	4	4	6	7	9	11	14	26
Outsourcing	41	48	58	67	79	92	109	18

EXHIBIT B-9

Outsourcing Market—Netherlands ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	53	59	68	76	88	103	123	16
Applications Operations	27	32	38	44	50	59	68	16
Desktop Services	18	23	32	41	53	70	94	32
Network Management	6	12	15	18	20	26	32	22
Outsourcing	103	126	152	179	211	258	316	20

EXHIBIT B-10

Outsourcing Market—Belgium ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	29	34	39	46	53	62	71	16
Applications Operations	17	21	25	29	34	41	47	18
Desktop Services	1	1	1	2	2	3	4	30
Network Management	3	4	4	5	6	8	9	21
Outsourcing	50	59	69	82	96	113	130	17

EXHIBIT B-11

Outsourcing Market—Switzerland ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	18	22	24	27	30	33	37	11
Applications Operations	14	15	17	20	23	26	30	15
Desktop Services	2	3	4	4	6	7	9	25
Network Management	4	5	7	9	11	14	19	29
Outsourcing	37	45	52	60	69	81	94	16

EXHIBIT B-12

Outsourcing Market—Austria ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	6	7	8	9	11	12	13	13
Applications Operations	6	7	8	9	10	12	13	14
Desktop Services	2	3	3	4	5	7	8	23
Network Management	2	3	4	5	6	8	10	30
Outsourcing	16	20	23	27	32	38	44	18

EXHIBIT B-13

Outsourcing Market—Spain ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	19	23	26	30	36	42	48	16
Applications Operations	21	24	27	31	37	43	50	16
Desktop Services	3	3	4	5	6	8	10	25
Network Management	11	17	21	26	32	41	51	25
Outsourcing	54	67	78	93	110	132	158	19

EXHIBIT B-14

Outsourcing Market—Portugal ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	1	1	1	1	2	2	2	22
Applications Operations	1	1	1	1	1	1	2	19
Desktop Services	0	0	1	1	1	1	1	23
Network Management	1	1	1	1	1	2	2	27
Outsourcing	2	3	3	4	5	6	8	24

EXHIBIT B-15

Outsourcing Market—Greece ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	2	2	2	3	3	4	4	15
Applications Operations	1	1	2	2	2	2	3	14
Desktop Services	0	0	0	0	1	1	1	23
Network Management	0	1	1	1	1	2	2	28
Outsourcing	3	4	5	6	7	8	9	17

EXHIBIT B-16

Outsourcing Market—Ireland ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	4	4	5	6	7	9	11	19
Applications Operations	2	2	3	3	3	3	3	15
Desktop Services	0	0	0	1	1	1	1	40
Network Management	2	2	2	3	4	4	5	25
Outsourcing	7	9	11	12	14	18	19	17

EXHIBIT B-17

Outsourcing Market—Eastern Europe ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	1	4	5	7	10	15	20	38
Applications Operations	1	1	2	3	5	8	15	72
Desktop Services	0	1	2	2	3	5	5	38
Network Management	1	2	1	2	3	5	10	38
Outsourcing	3	8	9	14	21	33	50	44

EXHIBIT B-18

Outsourcing Market—Total Europe ($ Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	1,090	1,260	1,510	1,800	2,150	2,570	3,020	19
Applications Operations	730	880	1,070	1,290	1,560	1,870	2,280	21
Desktop Services	160	260	350	460	600	810	1,050	32
Network Management	320	410	500	620	760	940	1,180	24
Outsourcing	2,300	2,800	3,450	4,200	5,100	6,200	7,500	22

C
Forecasts in ECUs (Millions)

Please note that the totals in the following exhibits may not add due to rounding.

EXHIBIT C-1

Outsourcing Market—France (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	170	200	240	280	330	400	470	19
Applications Operations	160	190	220	260	300	350	400	17
Desktop Services	14	22	29	37	47	60	76	28
Network Management	72	83	101	122	147	177	213	21
Outsourcing	410	490	580	700	830	980	1,160	19

EXHIBIT C-2

Outsourcing Market—Germany (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	40	40	50	50	60	70	80	16
Applications Operations	40	50	70	80	100	120	150	22
Desktop Services	17	29	39	54	71	93	123	33
Network Management	49	64	76	93	113	135	167	21
Outsourcing	150	190	230	280	350	420	520	23

EXHIBIT C-3

Outsourcing Market—United Kingdom (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	380	430	530	640	780	950	1,120	21
Applications Operations	150	200	250	320	410	500	640	27
Desktop Services	56	91	126	168	224	308	406	35
Network Management	63	84	105	133	168	210	266	26
Outsourcing	660	810	1,020	1,270	1,580	1,970	2,430	25

EXHIBIT C-4

Outsourcing Market—Italy (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	70	80	100	110	130	160	180	17
Applications Operations	80	100	120	150	170	210	250	19
Desktop Services	5	8	10	12	15	18	23	25
Network Management	21	25	32	39	49	62	78	26
Outsourcing	180	220	260	310	370	440	530	19

EXHIBIT C-5

Outsourcing Market—Sweden (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	27	32	38	44	50	57	65	15
Applications Operations	10	11	12	14	16	18	21	14
Desktop Services	4	7	9	11	13	17	23	28
Network Management	5	6	8	11	13	17	23	30
Outsourcing	45	56	66	79	93	110	131	19

EXHIBIT C-6

Outsourcing Market—Denmark (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	6	7	8	10	12	13	15	17
Applications Operations	8	8	10	11	13	15	17	15
Desktop Services	3	4	5	6	8	10	13	27
Network Management	2	2	2	3	4	5	6	27
Outsourcing	18	22	25	31	37	43	51	19

EXHIBIT C-7

Outsourcing Market—Norway (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	9	11	13	15	17	20	23	16
Applications Operations	8	9	11	13	15	18	20	18
Desktop Services	3	4	5	6	8	11	14	30
Network Management	2	3	3	4	5	6	8	27
Outsourcing	20	26	31	38	45	54	64	20

EXHIBIT C-8

Outsourcing—Finland (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	16	18	22	26	29	34	38	16
Applications Operations	11	13	15	17	19	23	27	16
Desktop Services	1	2	3	3	4	5	6	22
Network Management	3	3	4	5	7	9	11	26
Outsourcing	31	37	44	50	59	69	82	18

EXHIBIT C-9

Outsourcing Market—Netherlands (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	40	44	50	57	66	77	92	16
Applications Operations	20	24	29	33	37	44	50	16
Desktop Services	13	17	24	31	39	52	70	32
Network Management	4	9	11	13	15	20	24	22
Outsourcing	77	94	114	133	157	192	236	20

EXHIBIT C-10

Outsourcing Market—Belgium (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	21	25	29	34	40	46	53	16
Applications Operations	13	16	18	22	26	31	35	18
Desktop Services	1	1	1	1	2	2	3	30
Network Management	3	3	3	4	5	6	7	21
Outsourcing	37	44	52	61	72	84	97	17

EXHIBIT C-11

Outsourcing Market—Switzerland (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	14	16	18	20	22	25	28	11
Applications Operations	10	11	13	15	17	20	22	15
Desktop Services	2	2	3	3	4	5	7	25
Network Management	3	4	5	6	8	11	14	29
Outsourcing	28	33	39	44	52	60	70	16

EXHIBIT C-12

Outsourcing Market—Austria (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	5	5	6	7	8	9	10	13
Applications Operations	4	5	6	7	8	9	10	14
Desktop Services	1	2	2	3	4	5	6	23
Network Management	1	2	3	4	5	6	8	30
Outsourcing	12	15	17	20	24	28	33	18

EXHIBIT C-13

Outsourcing Market—Spain (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	15	17	20	23	26	31	36	16
Applications Operations	16	18	20	23	27	32	37	16
Desktop Services	2	2	3	4	5	6	7	25
Network Management	9	12	15	19	24	30	38	25
Outsourcing	40	50	58	69	82	98	118	19

EXHIBIT C-14

Outsourcing Market—Portugal (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	1	1	1	1	1	2	2	22
Applications Operations	0	1	1	1	1	1	1	19
Desktop Services	0	0	0	0	1	1	1	23
Network Management	0	1	1	1	1	1	2	27
Outsourcing	2	2	3	3	4	5	6	24

EXHIBIT C-15

Outsourcing Market—Greece (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	1	2	2	2	2	3	3	15
Applications Operations	1	1	1	1	2	2	2	14
Desktop Services	0	0	0	0	0	0	1	23
Network Management	0	0	1	1	1	1	1	28
Outsourcing	3	3	4	4	5	6	7	17

EXHIBIT C-16

Outsourcing Market—Ireland (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	3	3	4	5	5	7	9	19
Applications Operations	1	1	2	2	2	2	2	15
Desktop Services	0	0	0	0	1	1	1	40
Network Management	1	1	2	2	3	3	4	25
Outsourcing	5	7	8	9	11	13	14	17

EXHIBIT C-17

Outsourcing Market—Eastern Europe (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	1	3	4	5	8	11	15	38
Applications Operations	1	1	1	2	3	6	11	72
Desktop Services	0	1	1	1	2	3	4	38
Network Management	1	1	1	1	2	4	7	38
Outsourcing	2	6	7	10	16	25	37	44

EXHIBIT C-18

Outsourcing Market—Total Europe (ECU Millions)

Subsector	1991	1992	1993	1994	1995	1996	1997	1992-1997 CAGR (%)
Platform Operations	810	940	1,120	1,340	1,600	1,920	2,270	19
Applications Operations	540	660	800	960	1,160	1,400	1,700	21
Desktop Services	120	190	260	340	450	600	790	33
Network Management	240	300	370	460	570	710	890	24
Outsourcing	1,700	2,100	2,550	3,100	3,800	4,600	5,650	22

D
Forecast Reconciliation

Exhibit D-1 shows the reconciliation for Europe as a whole between the 1991 and 1992 forecasts.

EXHIBIT D-1

European Reconciliation

	1991 Market				1996 Market				1991	1992
Subsection	1991 Report (Fcst)	1992 Report (Act)	Variance ($M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance ($M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	840	1,090	250	30	1,995	2,570	575	29	19	19
Applications Operations	645	730	85	13	1,755	1,870	115	7	22	21
Desktop Services	0	160	160	NA	0	810	810	NA	0	32
Network Management	0	320	320	NA	0	940	940	NA	0	24
Outsourcing	1,490	2,300	810	54	3,750	6,200	2,450	65	20	22

It can be seen that there is a variance of 54% between last year's forecast and the revised forecast for 1991. Thirty-two percent of this is accounted for by the introduction of the two new subsectors—desktop services and network management. A further 5% is accounted for by differences in currency exchange rates. The introduction of Eastern Europe has negligible impact.

This leaves an increase in 17% in the forecast for the outsourcing market in 1991, which is accounted for by the upward revision of the estimate for the U.K. Outsourcing market.

Overall the forecast growth rates for Europe for platform operations and applications operations remain similar to those forecast last year. However the introduction of the two additional subsectors—network management and desktop services—with their forecast high growth rates has increased the overall forecast for outsourcing growth from 20% per annum to 22% per annum.

Detailed reconciliations for each of the countries are shown in Exhibits D-2 to D-17. No forecast for Eastern Europe was included in 1991.

EXHIBIT D-2

Reconciliation—France (FF Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	900	1,150	250	28	1,950	2,770	820	42	17	19
Applications Operations	1,350	1,100	-250	-19	4,000	2,410	-1,590	-40	24	17
Desktop Services	0	100	100	NA	0	415	415	NA	0	28
Network Management	0	500	500	NA	0	1,230	1,230	NA	0	21
Outsourcing	2,250	2,850	600	27	5,950	6,850	900	15	21	19

EXHIBIT D-3

Reconciliation—Germany (DM Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	70	75	5	7	145	150	5	3	16	16
Applications Operations	95	90	-5	-5	260	240	-20	-8	22	22
Desktop Services	0	35	35	NA	0	190	190	NA	0	33
Network Management	0	100	100	NA	0	275	275	NA	0	21
Outsourcing	165	300	135	82	405	855	450	111	20	23

EXHIBIT D-4

Reconciliation—United Kingdom (£ Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	175	270	95	54	465	680	215	46	22	21
Applications Operations	62	110	48	77	175	360	185	106	23	27
Desktop Services	0	40	40	NA	0	220	220	NA	0	35
Network Management	0	45	45	NA	0	150	150	NA	0	26
Outsourcing	235	470	235	100	640	1,410	770	120	22	25

EXHIBIT D-5

Reconciliation—Italy (Lira Billions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	115	115	0	0	255	240	-15	-6	17	17
Applications Operations	130	130	0	0	340	320	-20	-6	21	19
Desktop Services	0	8	8	NA	0	29	29	NA	0	24
Network Management	0	32	32	NA	0	95	95	NA	0	26
Outsourcing	245	285	40	16	595	685	90	15	19	19

EXHIBIT D-6

Reconciliation—Sweden (Sek Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	200	200	0	0	440	420	-20	-5	17	15
Applications Operations	70	70	0	0	140	135	-5	-4	15	14
Desktop Services	0	30	30	NA	0	130	130	NA	0	28
Network Management	0	35	35	NA	0	130	130	NA	0	30
Outsourcing	270	335	65	24	580	815	235	41	17	19

EXHIBIT D-7

Reconciliation—Denmark (DK Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	45	45	0	0	100	105	5	5	17	17
Applications Operations	60	60	0	0	120	115	-5	-4	15	15
Desktop Services	0	20	20	NA	0	80	80	NA	0	27
Network Management	0	12	12	NA	0	40	40	NA	0	27
Outsourcing	105	140	35	33	220	340	120	55	16	19

EXHIBIT D-8

Reconciliation—Norway (NK Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	70	70	0	0	170	155	-15	-9	19	16
Applications Operations	60	60	0	0	150	140	-10	-7	20	18
Desktop Services	0	20	20	NA	0	85	85	NA	0	30
Network Management	0	12	12	NA	0	50	50	NA	0	27
Outsourcing	130	160	30	23	320	430	110	34	20	20

EXHIBIT D-9

Reconciliation—Finland (FM Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	85	85	0	0	200	185	-15	-8	19	16
Applications Operations	60	60	0	0	135	125	-10	-7	18	16
Desktop Services	0	8	8	NA	0	27	27	NA	0	22
Network Management	0	17	17	NA	0	45	45	NA	0	26
Outsourcing	145	170	25	17	335	380	45	13	18	18

EXHIBIT D-10

Reconciliation—Netherlands (Dfl Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	90	90	0	0	190	175	-15	-8	16	16
Applications Operations	45	45	0	0	100	100	0	0	17	16
Desktop Services	0	30	30	NA	0	120	120	NA	0	32
Network Management	0	10	10	NA	0	45	45	NA	0	22
Outsourcing	135	175	40	30	290	440	150	52	17	20

EXHIBIT D-11

Reconciliation—Belgium (BF Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	890	890	0	0	1,950	1,920	-30	-2	17	16
Applications Operations	530	530	0	0	1,250	1,270	20	2	19	18
Desktop Services	0	25	25	NA	0	85	85	NA	0	30
Network Management	0	105	105	NA	0	240	240	NA	0	21
Outsourcing	1,400	1,550	150	11	3,200	3,520	320	10	18	17

EXHIBIT D-12

Reconciliation—Switzerland (SF Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	24	24	0	0	60	45	-15	-25	20	11
Applications Operations	8	18	10	125	20	35	15	75	20	15
Desktop Services	0	3	3	NA	0	10	10	NA	0	25
Network Management	0	5	5	NA	0	20	20	NA	0	29
Outsourcing	32	50	18	56	80	110	30	36	20	16

EXHIBIT D-13

Reconciliation—Austria (Sch Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	65	65	0	0	125	125	0	0	14	13
Applications Operations	60	60	0	0	120	120	0	0	15	14
Desktop Services	0	20	20	NA	0	70	70	NA	0	23
Network Management	0	20	20	NA	0	85	85	NA	0	30
Outsourcing	125	165	40	32	245	400	155	63	14	18

EXHIBIT D-14

Reconciliation—Spain (Pta Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	1,850	1,850	0	0	3,900	4,000	100	3	16	16
Applications Operations	2,000	2,000	0	0	4,200	4,100	-100	-2	16	16
Desktop Services	0	250	250	NA	0	735	735	NA	0	25
Network Management	0	1,100	1,100	NA	0	3,900	3,900	NA	0	25
Outsourcing	3,850	5,200	1,350	35	8,100	12,700	4,600	57	16	19

EXHIBIT D-15

Reconciliation—Portugal (Esc Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	120	100	-20	-17	290	265	-25	-9	19	22
Applications Operations	120	80	-40	-33	270	195	-75	-28	18	20
Desktop Services	0	30	30	NA	0	138	138	NA	0	24
Network Management	0	70	70	NA	0	255	255	NA	0	27
Outsourcing	240	280	40	17	560	855	295	53	18	23

EXHIBIT D-16

Reconciliation—Greece (Dra Millions)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	350	300	-50	-14	850	620	-230	-27	19	15
Applications Operations	370	200	-170	-46	950	410	-540	-57	21	14
Desktop Services	0	20	20	NA	0	115	115	NA	0	23
Network Management	0	80	80	NA	0	275	275	NA	0	28
Outsourcing	720	600	-120	-17	1,800	1,400	-400	-22	20	16

EXHIBIT D-17

Reconciliation—Ireland (IR £)

	1991 Market				1996 Market				1991	1992
Subsector	1991 Report (Fcst)	1992 Report (Act)	Variance (M)	Variance (%)	1991 Report (Fcst)	1992 Report (Fcst)	Variance (M)	Variance (%)	Report CAGR (Fcst)	Report CAGR (Fcst)
Platform Operations	2	2	0	0	4	5	1	25	10	19
Applications Operations	1	1	0	0	2	2	0	0	13	0
Desktop Services	0	0	0	NA	0	1	1	NA	0	40
Network Management	0	1	1	NA	0	3	3	NA	0	25
Outsourcing	3	4	1	14	6	10	5	82	9	17

E
Economic Assumptions

EXHIBIT E-1

U.S. Dollar and ECU Exchange Rates, 1992

Country	Currency	U.S. Dollar	ECU
Europe	$	1	0.745
France	FF	5.18	6.96
Germany	DM	1.52	2.04
United Kingdom	PS	0.532	0.715
Italy	Lira	1,150	1,544
Sweden	Sek	5.54	7.45
Denmark	DK	5.89	7.93
Norway	NK	5.98	8.03
Finland	FM	4.15	5.51
Netherlands	Dfl	1.71	2.29
Belgium	BF	31.26	41.94
Switzerland	SF	1.35	1.81
Austria	Sch	10.63	14.33
Spain	Ptas	96.2	129.6
Portugal	Esc	134.9	181
Greece	Dra	174	234.8
Ireland	IP	0.57	0.765
Eastern Europe	$	1	0.745

Source: *Financial Times*, 30 December 1991

EXHIBIT E-2

Inflation Assumptions, 1991 and 1992

Country	Assumption 1991-1996	Assumption 1992-1997	Change
France	3.0	2.7	-0.3
Germany	2.7	3.9	1.2
United Kingdom	4.8	3.7	-1.1
Italy	4.4	5.2	0.8
Sweden	6.3	4.0	-2.3
Denmark	2.7	2.4	-0.3
Norway	4.9	3.4	-1.5
Finland	5.0	1.4	-3.6
Netherlands	2.4	3.3	0.9
Belgium	3.3	3.2	-0.1
Switzerland	3.3	3.5	0.2
Austria	2.6	3.2	0.6
Spain	4.7	5.0	0.3
Portugal	8.0	12.5	4.5
Greece	12.0	11.0	-1.0
Ireland	3.0	3.0	0.0
Eastern Europe	-	-	-
European Average	4.0	4.2	0.2